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10/009,555	03/12/2002	Nobuyuki Kanno	FY 16755PCTUS	4606

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EXAMINER

AVERY, BRIDGET D

ART UNIT	PAPER NUMBER
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3618

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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# Office Action Summary

Application No.

10/009,555

Applicant(s)

KANNO ET AL.

Examiner

Bridget Avery

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 30days MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. The preliminary amendment filed by applicant on May 9, 2002 is acknowledged and has been entered.

#### ***Claim Objections***

2. Claim 1, line 5, --an—should be inserted before “upper”.
3. Claim 3 is objected to because of the following informalities: On line 5, “said” before “movable” should be changed to --the--. Appropriate correction is required.
4. Claim 4 is objected to because of the following informalities: On line 4, “said” before “movable” should be changed to --the--. Appropriate correction is required.
5. Claim 19, line 3, “zones” should be changed to --zone--.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
7. In claims 1-26, applicant's use of the term “type” is confusing and renders the claims indefinite.

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8. Claim 2 recites the limitation "the movable member" in line 3. There is insufficient antecedent basis for this limitation in the claim. For the purposes of examination, it is assumed that "movable member" refers to the "external member."

9. In claim 5, line 3, the phrase "and sloping obliquely up inward to the center in the wheelchair width direction from right and left ends" is confusing rendering the claim indefinite.

10. In claim 15, line 5, the phrase "on one side in the wheelchair width direction of the handle cover's top surface being depressed below said operation panel portion to form..." is confusing rendering the claim indefinite.

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9/24/03  
In claims 8 and 24, the recitation "group comprising" should be --group consisting of-- for proper form.

**Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-7, 9, 14, 17, 18, 19, 20-23 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Kan et al. (US Patent 5,927,414).

Kan et al. teaches an electric motor-operated wheelchair (D), a frame (1) with a seat (10a), at least one wheel (5) journaled by the frame (1) and driven by an electric motor (21) carried by the frame (1), a bar handle extending upward from a rearward portion of the frame (1) and having a cross piece of a double member structure including a fixed member (59) attached to the frame (1) and an external member (55,

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56) disposed along at least an upper side portion of the fixed member (59); a (human force) detecting means (51, 52, 53, 54) interposed between the fixed member (59) and the external member (55, 56) to detect control information based on an external force applied to the external member (55, 56), and a control means (20) for controlling the electric motor (21) to produce assisting power commensurate with the control information detected by the detecting means (51, 52, 53, 54). Re claim 2, the detecting means (51, 52, 53, 54) includes a displacement detecting means for detecting control information, namely relative displacement between the fixed member (59) and the external member (55, 56), and the control means (20) is provided to control the electric motor (21) to produce assisting power commensurate with the detected displacement. Re claims 3 and 4, the displacement detecting means (51, 52, 53, 54) is disposed in the center, with respect to the wheelchair (D) width, of at least one of the fixed member (59) and the external member (55, 56), guides (58) are provided on right and left sides of the displacement detecting means (51, 52, 53, 54) to restrict up and down movements and to permit forward and reverse movements of the external member (55, 56) and grip members (8, 9 Note: Figure 12 clearly shows handles (portion connected by guide 58) having grip members (portion attached to the distal end of the handles)) are provided on right and left sides of the external member (55, 56). With respect to claim 5, as best understood, the right and left grip members (8, 9) are positioned symmetrically apart from the longitudinal centerline of the wheelchair (D) and sloping obliquely up and inward with respect to the center in the wheelchair (D) width direction from right and left ends. Re claim 6, the assist power controlling means (20) controls the electric motor

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(21) to move forward or backward according to the magnitude of the relative displacement between the fixed member (59) and the external member (55, 56) of the bar handle, and controls the electric motor (21) to stop irrespective of the value detected with the displacement detecting means (51, 52, 53, 54) when a separately provided second operator is turned on (i.e. predetermined speed range limitations, as described in column 8, lines 47-52). Re claim 9, the detecting means (51, 52, 53, 54) includes a load detecting means for detecting the magnitude of the load applied to the external member (55, 56) and the control means (20) controls the electric motor (21) so as to produce assist power commensurate with the detected load (column 8, lines 47-61). Re claim 14, the detecting means (51, 52, 53, 54) outputs control information based on the external force acting on the external member (55, 56) in a horizontal direction (as clearly shown in Figure 11). Re claim 17, the wheelchair (D) has an operator control for propelling the wheelchair backward (as described in column 8, lines 40-46), and a motor control for driving the motor (21) forward according to the detected value coming from the human force detecting means (see column 8, lines 34-40) and for driving the motor (21) backward when the operator is turned on (i.e. detection made/operator activated by pulling or pushing of the handles/grips (8, 9)). Re claim 18, the detecting means (51, 52, 53, 54) is a zero point detecting means for outputting a zero point signal when the relative movement amount of the handle (8, 9) is a specified value, and the motor control means (20) controls the motor (21) using a reference value which is the value detected with the human force detecting means when the zero point signal is outputted (as described in column 8, lines 52-67 and column 9, lines 1-44). Re claim 19, the motor

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control means (20) controls the motor (21) according to a first and a second insensible zone, the first insensible zone including the area where the relative movement amount of the push handle (8, 9) is smaller than the specified value, and with the second insensible zone greater than the specific value to an upper limit greater than the specific value (i.e. predetermined values and reverse). Re claim 20, the motor control means (20) drives the motor (21) forward according to the value detected when the detected value is beyond the second insensible zone, makes the output of the motor (21) zero when the detected value is in the second insensible zone, and causes the motor (21) to function as a generator brake (as described in column 9, lines 23-44) when the detected value is in the first insensible zone. Re claim 21, the operating sections are the sections of external members (55, 56) that receive the handle legs. The operating sections clearly have slits, as illustrated in Figure 12. Re claim 22, the connecting member/guide (58) connects the movable handles disposed in the grip members (8, 9) to the operating section. Re claims 23 and 26, the push handles (8, 9) are made up of right and left leg portions secured to the frame (1) of the wheelchair (D) and extending upward and the grips (8, 9) are capable of relative back-and-forth movement, and the detecting means (51, 52, 53, 54) detects the human force from the relative movement amount of the movable grip (8, 9).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kan et al. ('414) in view of Lille (US Patent 6,579,612).

Kan et al. teaches the features described above including pressure sensors (51, 52, 53, 54).

Kan et al. lacks the teaching of a magnetostrictive sensor.

Lille teaches a magnetostrictive sensor structure.

Based on the teachings of Lille, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the wheelchair of Kan et al. to include magnetostrictive sensors to reduce manufacturing cost as the magnetostrictive sensors are simple in structure and thus reliable and inexpensive.

### ***Allowable Subject Matter***

13. Claims 8, 11, 13, 15, 16, 24 and 25 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ulrich et al. shows a power assist vehicle.



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Kanno et al. shows a power-assisted vehicle.

Prior et al. shows a combination power wheelchair and walker.

Hutcherson et al. shows a wheel chair system.

Meeker shows an apparatus and method for attaching a motorized wheel to a wheelchair.

Sato et al. shows a braking control system for a vehicle driven by an electric motor.


Kikutani et al. shows a motor driven vehicle.

Fujigaki shows a manual driving force sensing unit for motor driven vehicle.

15. Any inquiry concerning this communication should be directed to Bridget Avery at telephone number 703-308-2086.

  
Avery

September 23, 2003

  
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9/24/03